

## **ABSTRACT**

The present invention rapidly and efficiently provides proteins engineered to bind to arbitrary target proteins requiring only knowledge of the amino acid sequences of short portions of the target proteins (for example, either the amino or the carboxy termini).

5 This invention provides such proteins as well as methods and systems for their design, synthesis and use, and especially provides for use of a plurality of binding proteins in array format. The engineering methods of the present invention take a precursor protein known to already bind to a short peptide and engineer alterations in precursor proteins so that it binds to a new target peptide by using computer-assisted molecular design techniques and  
10 optional assay for actual binding. The invention also provides arrays and libraries of binding proteins and methods of using binding proteins.

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